JOINT MESSAGEFORM

SECURITY CLASSIFICATION [redacted]

SPACE BELOW RESERVED FOR COMMUNICATION CENTRE

L 411

PRECEDENCE	TYPE MSG (Check)			ACCOUNTING SYMBOL	ORIG. OR REFERS TO	CLASSIFICATION OF REFERENCE
ACTION	BOOK	MULTI	SINGLE			
INFO						

FROM:
6595TH AEROSPACE TEST WG, VANDENBERG AFB, CALIF.

TO:
SPACE SYSTEMS DIV LOSA CALIF
VWZD 4-12-333

SUBJECT: 8-HOUR FLASH REPORT

I. SUMMARY

A VEHICLE CONSISTING OF SLV-2 BOOSTER NO. 361 AND S-01 A ORBITAL STAGE NO. 1155 WAS LAUNCHED ON THE FIRST ATTEMPT FROM VAFB COMPLEX 75-1, PAD 2, AT 1330:3560 PST ON DECEMBER 4, 1962. THE PRIMARY LAUNCH OBJECTIVE, TO PLACE THE S-01A SATELLITE WITH PAYLOAD IN A NEAR-POLAR ORBIT, WAS ACCOMPLISHED. THE VTS RADAR PLOTBOARD INDICATED THE FOLLOWING APPROXIMATE INJECTION CONDITIONS: ALTITUDE, 126 STATUTE MILES; PAD REFERENCED VELOCITY, 25,060 FPS; ELEVATION FLIGHT PATH ANGLE, APPROXIMATELY 0 DEG; AZIMUTH FLIGHT PATH ANGLE, APPROXIMATELY 153 DEG. THE ORBITAL PERIOD ATTAINED APPEARS TO BE SLIGHTLY BELOW NOMINAL. BASED ON FIRST

SPECIAL INSTRUCTIONS

By authority of [redacted] HFR 205-2 7 APR 1966

CLASSIFICATION CHANGED TO [redacted]

DATE 4 TIME
MONTH DEC YEAR 62

WRITER
SYMBOL
TYPED NAME AND TITLE (Signature, if required)
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SECURITY CLASSIFICATION [redacted]

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FROM:

6595 TH AEROSPACE TEST WG, VANDENBERG AFB, CALIF, [redacted]

PASS ACQUISITION.

II. SIGNIFICANT EVENTS

PRELIMINARY VALUES OF SIGNIFICANT LAUNCH EVENTS ARE:

LIFTOFF (1330:35.60 PST)	ZERO	
STEERING INITIATED	91.9 SEC	
MECO [redacted] (70 per cent Az)	146.8 SEC	(PROPELLANT DEPLETION)
VECO	155.8 SEC	
ENABLE D1 AND D2 (S2)	151.6 SEC	
D1 ON	154.35 SEC	
D1 OFF	154.45 SEC	
D2 ON	154.74 SEC	
D2 OFF	155.69 SEC	
SEPARATION [redacted] START	159.8 SEC	(D-TIMER BACK UP)
SEPARATION COMPLETE	162.2 SEC	
ULLAGE ROCKET IGNITION	181.8 SEC	
S-01 (A) ENGINE IGNITION	191.5 SEC	
S-01 (A) THRUST ATTAINMENT (90 PER CENT PC)	192.6 SEC	
S-01 (A) BURNOUT (70 PER CENT PC)	433.2 SEC	(PROPELLANT DEPLETION)
VTS VERLORT RADAR FADE	440 SEC	
VTS ACQUISITION BEACON FADE	482 SEC	
VTS [redacted] FADE (LINK 1)	484 SEC	

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FROM:
6595 TH AEROSPACE TEST WG, VANDENBERG AFB, CALIF. [redacted]

III. SLV-2 PERFORMANCE

BOOSTER SUBSYSTEM PERFORMANCE COULD NOT BE EVALUATED DUE TO LOSS OF SLV-2 TELEMETRY IMMEDIATELY FOLLOWING LIFTOFF; HOWEVER GROUND GUIDANCE AND TRACKING DATA PERMIT THE FOLLOWING CONCLUSIONS:

(a) BOOSTER AUTOPILOT AND FLIGHT CONTROL SYSTEM PERFORMED SATISFACTORILY AS EVIDENCED BY NORMAL MAGNITUDE GROUND GUIDANCE STEERING.

(b) MAIN ENGINE CUT-OFF OCCURRED BEFORE THE GROUND GUIDANCE SYSTEM TARGET CONDITIONS WERE ACHIEVED. GROUND GUIDANCE SYSTEM DATA INDICATED THAT BOOSTER COAST APOGEE ALTITUDE WAS 102.7 NM (NOMINAL: 106.9 NM), AND THE VELOCITY WAS 9796 FPS (NOMINAL: 10,070 FPS).

THESE DEFICIENCIES INFER A PROPELLANT DEPLETION MECO, HOWEVER THE ABSENCE OF BOOSTER T/M PRESENTS SPECIFIC CONCLUSIONS ON THE NATURE OF THE SHUTDOWN OR THE CAUSE OF THE VELOCITY DEFICIENCY.

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DD FORM 1 MAY 65 173-1 [redacted] ☆ U. S. GOVERNMENT PRINTING OFFICE: 1965—800479

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FROM:
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IV. S-01A PERFORMANCE

ALL S-01A VEHICLE SUB-SYSTEMS PERFORMED SATISFACTORILY DURING LAUNCH TO PROVIDE ADEQUATE ORBITAL TRAJECTORY CONDITIONS; HOWEVER, ENGINE SHUTDOWN OCCURRED FROM PROPELLANT DEPLETION AND INJECTION VELOCITY WAS SLIGHTLY BELOW NOMINAL. THE DEFICIENCY IN SLV-2 PERFORMANCE REQUIRED THAT THE S-01A PROVIDE A CORRESPONDINGLY GREATER TOTAL IMPULSE AND VELOCITY GAIN WHICH WERE APPARENTLY BEYOND THE NORMAL CAPABILITY OF THE S-01A PROPULSION SYSTEM. THE QUANTITATIVE VELOCITY DEFICIENCY AT INJECTION CAN ONLY BE INFERRED FROM ORBITAL PARAMETERS, AS THE VELOCITY METER TELEMETRY MEASUREMENT (CHANNEL 14) WAS INOPERATIVE.

AN ABRUPT LOSS OF THE S-BAND BEACON RESPONSE AT 103 SEC CAUSED VTS VERLORT RADAR TO LOSE TRACK UNTIL 183 SEC. RECOVERY OF THE SIGNAL PERMITTED NORMAL TRACK UNTIL HORIZON FADE AT 440 SEC. KODIAK TS EXPERIENCED DIFFICULTY IN COMMANDING AN AUTO-TRACKING THE S-BAND BEACON ON PASS ONE.

AT THE TIME OF SIGNAL FADE AT VTS, ALL VEHICLE SUB-SYSTEMS WERE FUNCTIONING NORMALLY AND THE

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FROM:

4595TH AEROSPACE TEST WG, VANDENBERG AFB, CALIF [redacted]

ORBITAL TIMER WAS SET AT 5418 SEC (STEP 17) IN THE RESET-ON POSITION, IN THE INCREASE MODE, AND ALTERNATE RE-ENTRY DEARM STATE.

V. AEROSPACE GROUND EQUIPMENT

THE AEROSPACE GROUND EQUIPMENT FUNCTIONED PROPERLY TO ACCOMPLISH BOOSTER AND ORBITAL STAGE PRE-LAUNCH CHECKOUT.

VI. COUNTDOWN

THE COUNTDOWN WAS INITIATED AT 0500 PST AND PROGRESSED TO LIFTOFF WITH ONE HOLD IMPOSED AT T-15 (1245) FOR 30 MIN DUE TO TRAINS. THE FOLLOWING TECHNICAL DIFFICULTIES WERE ENCOUNTERED DURING THE COUNTDOWN:

1. DESTRUCT CHECKS (TASKS 4, 5, AND 6), EXCEPT FOR FINAL ARMING OF THE BOOSTER, WERE CONDUCTED WITH THE VEHICLE IN HORIZONTAL POSITION WITH APPROVAL OF RANGE SAFETY. R-1 DAY DESTRUCT CHECKS WERE NOT COMPLETED PRIOR TO START OF THE COUNTDOWN AND THE VEHICLE WAS LEFT IN THE HORIZONTAL POSITION IN THE EVENT PROBLEMS DEVELOPED WHICH REQUIRED ACCESS TO THE VEHICLE.

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2. DURING PHASING AND POLARITY CHECKS (TASK 9) THE SLV-2 HYDRAULIC SYSTEM COULD NOT BE OPERATED BECAUSE OF A DISCONNECTED UMBILICAL. WHEN THE UMBILICAL WAS INSTALLED, NORMAL OPERATION RESUMED.

3. THE CALIBRATIONS FOR THE LOW RANGE S-01A ORBITER AND FUEL TANK PRESSURE MEASUREMENTS WERE UNAVAILABLE.

4. DURING S-01A TEST PLUG REMOVAL, THE DIGITAL PROGRAM IN THE VELOCITY METER CHANGED, POSSIBLY DUE TO AN ELECTRICAL "SHORT". THE TEST PLUG WAS REINSTALLED, THE CORRECT PROGRAM LOADED INTO THE VELOCITY METER, AND THE TEST PLUG WAS REMOVED THE SECOND TIME WITHOUT INCIDENT.

5. FACILITY POWER AT THE VTS DATA ACQUISITION BUILDING WAS LOST DURING HOLD NO. 1 FROM 1240 TO 1250 PST.

6. THE VTS WAS NOT SET UP TO MONITOR CERTAIN S-01A PAYLOAD FUNCTIONS. HOWEVER, ALL TELEMETRY FUNCTIONS WERE MONITORED AT THE MAB GROUND STATION.

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DD FORM 1 MAY 65 173-1 [redacted] GOVERNMENT PRINTING OFFICE: 1966—230473